

## Summary document: OWIA Concussion Policy

Version 3 - SCAT5, Cognigram

### PURPOSE

The aim of this summary is to provide an overview of the OWIA Concussion Policy (version 3, SCAT5 & Cognigram).

- This summary is best used as a reminder of the key points for practical application in concussion management.
- It is assumed the reader has a level of knowledge commensurate with that of a medical practitioner or other trained health professional.
- It is recommended that the reader be familiar with, and as necessary refer to, the full [OWIA Concussion Policy](#) document.

### OVERVIEW

This Concussion Policy applies to all OWIA contracted athletes and staff. The goal of this policy is to ensure that concussion is recognised and treated with respect, according to the latest published scientific guidelines, in order to expedite safe early return to sport whilst minimising short-term risk and medium to long-term health consequences.

### WHAT IS A CONCUSSION?

Sport-related concussion may be caused by direct or transmitted force to the head. Concussions occur frequently in winter sport disciplines. Concussion results in a transient disturbance of brain function, which may be evident immediately, or evolve over a timeframe between 4-6 and 36-48 hours. The transient neurological disturbances are usually followed by spontaneous recovery within 7-10 days. However, each concussion is different and the time to full recovery can vary between days, weeks or even months.

### BEWARE OF STRUCTURAL INJURY

Forces to the head can produce structural damage including fractures, cervical spine injury and intracranial haemorrhage. These are emergencies which require urgent evacuation of the athlete.

### CONCUSSION MANAGEMENT GUIDELINES

#### STEP 1 – READY

Preparation is paramount, and includes:

##### Protective gear:

- Helmets
- Unequal helmet inserts
- Mouthguards

##### Baseline Testing:

Annual baseline pre-season testing is encouraged, including:

- [Cognigram](#) (or [ImPact as mandated and supplied by IBSE](#)) valid baseline test
- [SCAT5](#) (or [Child-SCAT5](#) for ages 5-12) baseline test
- [BESS](#) balance baseline test



## STEP 2 - RECOGNISE

### First response – apply first aid principles:

- DRABC
- Management of unconscious patient
- Cervical spine care
- Primary survey, secondary survey
- Exclude or manage traumatic injuries (structural)
- Maintain vigilance for structural brain injury - red flags, listed in red on page 2 of the [SCATS](#)

### Recognise the clinical domains of concussion:

- Use your own observations, video if available and reports from athletes, coaches, teammates or officials
- Keep watching – symptoms may change or take 24-48 hours to appear
- Take note of multiple clinical domains:

Clinical domain	Symptoms	Signs
Somatic	Headache, sensitivity to light or sound	
Cognitive	Feeling slowed down, or in a fog	Amnesia, perseveration, slowed reaction time
Emotional	Sadness, anger	Emotional lability, tearfulness
Neurological	Visual disturbance, incoordination	Neurological signs
Balance	Balance impairment	Groggy, unsteady gait
Behavioural	Irritability	Uncharacteristic aggression
Conscious state	Sleepiness, drowsiness	LOC

- Use the [Concussion Recognition Tool 5 \(CRT5\)](#) if there are no trained healthcare professionals present

## STEP 3 - REMOVE

- The athlete MUST be removed from play and MUST NOT resume sport that day if concussion is suspected or diagnosed
- The athlete MUST be evaluated by a trained healthcare professional; if unavailable on site, arrange early referral.
  - Exclude cervical spine or structural brain injury – if any doubt, arrange urgent referral.
  - The following signs are strongly indicative of concussion:
    - Traumatic convulsion (seizure)
    - Tonic posturing
    - Confirmed or suspected LOC – sliding like a “rag doll”
    - Ataxia – unsteady, “groggy”
    - Disorientation or confusion
- Perform post-injury concussion assessment ASAP (in 15 mins if possible) – [SCATS](#) and [BESS](#) balance. We recommend that you take a paper copy of the [SCATS](#) to all training and competition sites
- The athlete should not be left alone, and serial monitoring for deterioration is essential over the first 4-6 hours.
- If concussion is NOT confirmed, monitor symptoms for a minimum of 48 hours.
- Suspicion of concussion can only be removed to allow return to competition on the day, by OWIA sports physicians on-site.
  - Vigilant monitoring needs to be maintained, including review during and immediately post-event.
- If no OWIA medical or physiotherapy staff are present: fellow athletes, coaches, team administrators or parents who observe an athlete with possible concussion have a duty of care to remove the athlete from the field of play. Early referral to a doctor is recommended.



#### STEP 4 – RE-EVALUATE

- The athlete should be accompanied and closely monitored over the first 4-6 hours.
  - If you don't have the resources to do this, evacuate to a medical facility.
- Professional re-evaluation at 36-48 hours post-injury should be arranged.
- Suspected concussion can only be ruled out if all findings are negative at the 3 time points:
  - Immediately post-injury
  - 4-6 hours post-injury
  - 36-48 hours post-injury

- Notify coach & OWIA medical staff as soon as practical after a concussion.
- Send reports or imaging to the OWIA Chief Medical Officer and Medical Services & Rehab Manager.

#### STEP 5 - REST & RECOVERY

- “Symptom-limited physical & cognitive rest” for 24-48 hours,
  - Gradual progressive increase in physical and cognitive activity below symptom thresholds is encouraged.
  - Low-level exercise may benefit athletes whose symptoms are slow to resolve
    - This constitutes GRTS Stage 0 which can overlap with the rest period
- Monitor using [SCAT5](#) Symptom scale and [BESS](#) balance daily until scoring zero (or return to baseline)
  - Use AMS for monitoring and documentation
  - If there is any deterioration, seek medical assessment immediately
- Pain relief and non-steroidal anti-inflammatory (NSAID) medications are not recommended
- Sleep, nutrition and hydration are important post-concussion
- Once asymptomatic on the [SCAT5](#) Symptom Evaluation scale, progress to the [Cognigram](#) test
  - When the athlete passes [BESS](#) and [Cognigram](#) testing, move onto Stage 1 of the GRTS rehabilitation process below

#### STEP 6 - REHABILITATION & RETURN – GRADED RETURN TO SPORT (GRTS) PROGRAM

##### Graded Return to Sport Program (GRTS) – general principles:

- This GRTS applies for all concussive injuries
- Rehabilitation is a “graded return to sport” which is individualised.
- The fastest possible return to sport takes 7 days.
- Progression is more conservative in children, adolescents, in the presence of modifying factors and/or in the absence of direct medical support
- Refer to [Figure 1](#): GRTS Protocol for Winter Sport for summary guidance
- There are 6 stages of the GRTS
- The quickest possible progression is to move forward by one stage per 24 hours
- If symptoms recur at any stage, drop back to the previous asymptomatic level and try to progress again 24 hours later

**Graded Return to Sport Program (GRTS) – stages:**

**GRTS Stage 0 - Symptom-limited physical and mental activity**

- Commence after 24-48 hours relative rest; the minimum is 24 hours
- The objective is to be completely asymptomatic and to return to baseline scores on [BESS](#) and [Cognigram](#)

**GRTS Stage 1 - Light aerobic exercise**

- 15 mins of steady heart rate physical activity, at 60-70% of maximum predicted heart rate
- [Return to Vision & Balance Exercises](#) can also be commenced at this stage
  - Separately reassess symptoms 10 mins post-vision and balance exercise, in order to enable attribution of symptoms to either the exercise or the vision and balance program

**GRTS Stage 2 - Moderate aerobic exercise**

- 30 mins steady heart rate activity
  - The first 15 minutes at 60-70% maximum predicted HR, the next 15 minutes at 70-85% maximum predicted HR
- Outdoor activity such as walking, running or cycling can be incorporated for GRTS Stage 2

**GRTS Stage 3 - Sport-specific functional activities**

- A dry land battery of sport-specific tasks includes activities such as rolling, jumping, landings, hopping
- Communicate with OWIA staff for medical clearance before return to snow/ice.

**GRTS Stage 4 - Non-contact, low-impact, sport specific on-snow/ice training**

- Progressive resistance and high intensity interval training (HIIT) training can also be resumed

**GRTS Stage 5 - Full-contact, normal on-snow/ice training**

- Resumption of usual resistance training intensity

**GRTS Stage 6 - Unrestricted resumption of competition activities**



**FIGURE 1: GRTS Protocol for Winter Sport**



# Note: Medical clearance is required to progress from Stage 3 (dry-land) to Stage 4 (snow-ice)

## CONCUSSION MODIFIERS

Modifying factors necessitate slower progression of the GRTS protocol.

The number and severity of concussion modifiers affecting a particular athlete need to be considered, as they have a cumulative influence in retarding GRTS progression.

### Age: Children & adolescents

- Children and adolescents require more conservative management of concussion
- Asymptomatic return to school is the first priority for school-aged athletes, and a prerequisite before commencing GRTS Stage 1
  - Refer to [Table 1](#): Graduated Return to School strategy
    - Based on age 13-17: a minimum 1 week at Stage 0 is required before commencing GRTS Stage 1
      - This doubles the minimum return to sport time to 2 weeks (section of chart with red background)
    - Ages 5-12: a minimum 2 weeks at GRTS Stage 0, with 48 hours minimum per GRTS stage
      - This doubles the minimum return to sport time again, to 4 weeks (section of chart with yellow background)
      - The [Child-SCAT5](#) must be used for children aged 5-12



Additional concussion modifiers necessitate an even slower approach in children with medical guidance

**Additional concussion modifiers include**

- Symptoms and signs
- Past history
- Comorbidities
- Sport and behavioural risks
- Absence of OWIA medical support staff

**TABLE 1: Graduated Return to School Strategy**

Graduated Return to School strategy			
Stage	Aim	Activity	Goal of each step
1	Symptom-free activities at home	Typical symptom-free ADL including reading and screen time, 5-15 minutes & build up	Gradual return to usual activities
2	School activities at home	Homework, reading, other cognitive tasks	Increase tolerance to cognitive work
3	Return to school part-time	Graduated return to schoolwork. Part-day attendance or full days with increased breaks	Increase academic activities
4	Return to school full-time	Gradually progress to full days at school	Return to full academic activities & catch up on missed work

**SPECIFIC PHYSIOTHERAPY-BASED INTERVENTIONS**

Detailed physiotherapy assessment and specific treatment has been shown to assist with persistent symptoms of sport-related concussion, specifically in the presence of cervical involvement and vestibular involvement.

**DOCUMENTATION IN THE ATHLETE MANAGEMENT SYSTEM (AMS)**

Accurate, timely medical record keeping is essential. Please refer to the complete OWIA concussion policy for guidance with regard to AMS documentation.

**SANCTIONS**

There are sanctions that may be applied to enforce this OWIA Concussion Management Policy

**CHANGES TO THIS POLICY**

The OWIA reserves the right to vary or replace this Policy at any time and will do so as new research and future consensus statements on concussion are published.

Changes are effective upon posting on the OWIA website. When such changes are made, the OWIA will inform all interested parties by email, but nevertheless it remains the responsibility of all athletes and personnel to be informed of the most recent version of this Policy. It is recommended to visit the OWIA website to view the current [OWIA Concussion Policy](#), rather than relying on a printed or saved copy, which may be out of date.



## DOCUMENT HISTORY

Version	Adopted by OWIA	Content reviewed / purpose
2	30/06/2017	▪ SCAT5
3	19/11/2018	▪ Addition of Cognigram platform & removal of CogSport